

Federal Communications Commission  
Independent Panel Reviewing the Impact of Hurricane Katrina  
On Communications Networks

**Emergency Medical Service Report**

By

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**IMPACT OF HURRICANE KATRINA ON EMS  
COMMUNICATIONS IN SOUTH MISSISSIPPI**

**1. PROBLEMS AND CHALLENGES**

- 1.1. The Gulf Coast underestimated the magnitude of Hurricane Katrina despite very accurate predictions from National Hurricane Center. On Aug. 26 at 10 PM (56 hours from landfall), the NHC shifted the storm's path from Pensacola FL to Buras LA – they missed it by 18 miles. Computer models predicted a very large hurricane, 200 miles wide, with sustained hurricane force winds for 12 hours and tidal storm surge of 28+ feet, – this was unprecedented.
- 1.2. There are 250,000 people in Harrison & Hancock Counties in south MS. 11 hospitals. 15 nursing homes. 2 hospitals evacuated pre-storm, 3 evacuated post-storm. 4 nursing homes evacuated post-storm. No lives lost in healthcare facilities or as result of evacuation. VHF communications with hospitals was unreliable.
- 1.3. Disaster shelters were provided with portable two-way radios however they did not have emergency generator power so the radios failed when the batteries died.
- 1.4. 25,000 non-institutionalized special needs patients with severe disabilities. Many had to be evacuated by mutual aid ambulances that had varying types of radio systems.
- 1.5. Over 100 additional mutual aid ambulances brought into south MS by the State and private sector. Most did not have radio systems compatible with that of the local EMS lead agency.
- 1.6. So many landmarks and street signs were destroyed, ambulances could not navigate without use of GPS.
- 1.7. Two-way radio communications with local EMS worked well but could not communicate with state and federal health care organizations. Even they could not communicate with their regional and national offices.

- 1.8. Some cellular telephone systems were first overwhelmed by call volume then failed due to lack of electricity and tower site interconnectivity.
- 1.9. Some Integrated Digital Enhanced Network (IDEN) systems worked during the disaster however they were overloaded and EMS and other public safety agencies did not receive priority.
- 1.10. Areas that lost public safety communication services had partial disruption of command and control capabilities for federal, state and local public safety and disaster recovery services.
- 1.11. For some areas, technical support for public safety communications systems was inadequate both pre- and post-landfall.
- 1.12. Even in areas where the public safety communications infrastructure remained intact, fueling and maintenance of power generator systems proved to be a tremendous challenge.
- 1.13. Battery backup systems for public safety communications were inadequate in some locations.
- 1.14. Truck loads of fuel, medical supplies, pharmaceuticals were sent into disaster area however many never made it to their destinations because there was no communications with law enforcement at state borders who would direct the disaster relief supplies to alternate locations.
- 1.15. Hospital Association provided satellite radio-telephones to all hospitals however most external antennas were destroyed.
- 1.16. There were no federally contracted ambulances pre-deployed to MS for hurricane Katrina. For hurricane Rita however, hundreds of ambulances were pre-deployed to Houston with instructions on how to communicate with local EMS lead agency.

## **2. SUCCESSES AND BEST PRACTICES**

- 2.1. Harrison County's new \$15 million 800MHz trunked public safety radio system never failed. All 5 cities and the county operated on this system. The damage to the radio infrastructure, i.e., radio transmitters, receivers, antenna systems, towers, etc., was remarkably slight. Protective fallback modes and systems operated as designed.
- 2.2. Redundant battery backup systems worked well in the Harrison County trunked radio system, providing network operations for 14 hours until generators could be repaired or replaced.
- 2.3. AMR purchased hundreds of portable 800MHz radios to be used by mutual aid ambulances.
- 2.4. When the city of Pass Christian's police and fire dispatch center was destroyed, all 911 calls, including medical calls, were re-routed to the city of Biloxi PSAP. The switch was transparent and worked well for 4 months.

- 2.5. The E-911 telephone service in Hancock County was disrupted and calls were quickly re-routed to the secondary PSAP at AMR in Gulfport MS.
- 2.6. Expanded capacity was added to the Harrison County radio system to accommodate additional ambulance radios as well as other public safety agencies.
- 2.7. Hancock County's VHF radio system was destroyed so AMR deployed a mobile communications command vehicle to serve as a base station outside of the hospital in Bay St. Louis.
- 2.8. For some reason text messaging on wireless devices worked well even when voice communications failed.
- 2.9. Even when phone lines (land lines and cellular) began working, dialing local 228 area code numbers was difficult. Long distance numbers worked well. Eventually EMS purchased cell phones with long distance area codes to use locally.

### **3. SUMMARY**

Many lessons can be learned from Hurricane Katrina. This was the worst disaster in our nation's history. We should learn what worked well and what areas need improvement. Hopefully this panel will take the necessary time to study all aspects disaster-related communications and make decisions that positively impact the operability and survivability of both existing and future public safety radio systems.